CONSERVATORY OF ARTS AND TRADES, PARIS.

This daily progressing and expanding establishment was founded in the year 1792, the fiercest time of the French Revolution; but, on account of its palpable utility, fostered by all subsequent governments. Its galleries and collections are a tangible and working cyclopædia of arts and trades, unique in their kind. The following extract from the programme of "Lectures, public and gratuitous, of the Sciences applied to the Arts," (*Cours publics et gratuites, etc.*) will best illustrate the large and comprehensive basis of this establishment:

Geometry applied to Arts.—Ch. *Dupin*, Professor.—Instruction in geometric drawing for the pupils of Professor Dupin.

Descriptive Geometry.—*Olivier*, Professor.

Mechanics applied to Arts.—*Morin*, Professor. The lectures will begin with a synopsis of mechanics applied to the industrial arts, after which Professor Morin will treat of the resistances of materials, &c.

Physic applied to Arts.—*Pouillet*, Professor. These lectures will embrace the production of steam in various boilers, &c., galvanoplastics, and electric telegraphy.

Chemistry applied to industrial Arts.—*Payen*, Professor, will treat of sulphur and sulphuret of carbon; vulcanization of caoutchouc; on gutta percha; on acids, bases, &c.; the making of mortars, cements, &c.

Agriculture.—*Moll*, Professor, will treat on the irrigation of meadows, gardens, and fields; the examination of foreign agricultural implements best fitted to the circumstances of French husbandry.

Industrial Economy.—*Blanqui*, Professor, will treat on the economical constitution of the principal industrial branches of Europe, &c.

Legislation of Industry.—*Wolowski*, Professor; on the *conseils des prud'hommes*, on associations of working-men, the frauds in the making and selling of articles, &c.

It is to be observed, that the days and hours of these lectures are so chosen, as to be most convenient to the laborious classes of the French capital, whose attendance at all these lectures is very considerable.

PROPOSALS FOR FOUNDING A LIGHT-HOUSE (OF ALL NATIONS) ON THE GODWIN SANDS.

The principles of the construction of the Britannia Tubular Railway Bridge have suggested to me the means of ensuring a permanent foundation for a lighthouse constructed of wrought-iron, with an exterior fender of rough masonry; to be erected on, or near, the Godwin Sands.

Hitherto every attempt to erect a lighthouse on that site has failed, from the want of a solidity to withstand the full force of wind and waves. The system which I now venture to suggest will, it is presumed, offer the following essential advantages:—The greatest ultimate stability; relatively the most economical structure for such sites; admit of being very rapidly executed with the greatest safety; novelty of design in the general construction; and adapted to other sites. It will easily be observed that from the principles of the construction, and the necessary *order* of operations in the proposed undertaking, all the incidental contingencies will be effectively provided against; but it would obviously clog the subject too much to enter into details in the first stage of introduction to public notice.

During the first series of operations, the proposed foundation would consist of two iron girders, placed in form of a cross; with the sides, top, and ends double (each being lined with wood). In order to insure easy and perfect adjustment, the girders would have an underneath curve of about 2 feet: their being hollow, and the bottom capable of being opened in compartments as required, will admit of arrangements for excavating the sand through the girders, for the ultimate foundation on the chalk rock; and thus by the superincumbent weight of the whole structure would it settle down to its proper place. A series of very large "boiler plate" telescope tubes would rise from the centre of the crossed girders, which would constitute the framework of the lighthouse, and be raised by means of hydraulic presses. The workmen before they leave the shore would test, by repeated trials, the full capabilities of the structure, which would give them confidence in the whole undertaking, as all the preliminary adjustments and elevations would be executed entirely from the interior. The men would thus have, from the first to the last, a comfortable home in the lighthouse itself. After the working drawings were finished, all the materials might be made to fit; then marked (even in the workshops of the makers); afterwards conveyed to the sea-side, and put together; advantage being taken of the finest summer months to float it out in its pontoons, and deposit the telescope tubes and foundation girders upon the intended site.

Probably the shore between Deal and Sandwich would be selected to first erect a *temporary* yielding breakwater, *in a series forming a semicircle*, within which would be put together a large circular pontoon (in compartments), the *exterior* compartments of which would be filled with water (or sand) during the period only required for fitting up the girders and tubes within the pontoon (*which would thus form a dry dock*), so placed and calculated as to enable a steam-tug to tow it all out, *when finished*, at high-water, to its destination. The pontoon being in two moveable parts, could be easily disengaged when required, leaving the lighthouse and workmen on the proposed site. Of course, the selection of the site would be judiciously undertaken by the proper authorities, who would cause the same to be carefully buoyed out: they would have also to determine the *magnitude* of the lighthouse, general fittings, and the expenses of the materials required for the structure. During the summer months a sufficient weight and strength of materials could be properly placed, constituting the foundation of the lighthouse, which would prevent the sea from washing away the first courses: the *tubes* would form the nucleus or scaffolding, around which would be reared the masses of rough stone on the exterior, which united would finally merge into the structure itself, resting on a good independent foundation of 400 screw piles. In order to facilitate the operations on the exterior, portable cranes would be adjusted to the upper works. The pontoons would play an important part; and as they would be constructed to draw only a few feet water, they might afterwards be used to convey the rough stone for the exterior and the concrete for the lower parts of the interior; and if also required, the solid gas, or even coals for making gas, in the proposed lighthouse, being a cheap, clean, and practical means of illuminating to the greatest advantage.

Arthur Gearing.

Mr. Hoblyn, F.R.S., has just now published a description of a method of effecting the same purpose.*

This is the writer's plan:—

"Having selected a central and well considered situation, I should surround a space of about 200 feet diameter with a floating mass of faggots, which has been proved to be a most efficient breakwater. Within this circle, and constructed of iron, I should moor a large pontoon, formed in the shape of a ring, whose inner radius should be 30 feet less than its outer one; thus giving a circular platform 30 feet in width, encircling the space to be operated on. This pontoon should be constructed in segments, so that its diameter can at any time be lessened by the withdrawal of one or more segments. The buoyancy of the pontoon could be lessened, if necessary, by pumping in water. Having moored this, it is proposed to commence sinking a series of hollow iron rings; the first ring to be 120 feet external and 100 feet internal diameter; each ring to be 10 feet in height, and to diminish in diameter every succeeding ring. These rings would be formed of wrought-iron, put together with inner flanges firmly bolted together, and excluding the water on all sides save the upper one. The first or bottom ring would have a sharp edge. This first ring would be attached by chains to the pontoon, to prevent the possibility of its sinking too rapidly; but I conceive that these rings would of themselves have sufficient buoyancy to enable the superintending engineer to regulate their descent. The first ring being in its place, proceedings would be taken to attach the second ring to it, and to fill in the first ring with rubble work in cement, which, by the additional weight, would cause the rings to descend. By the time that the third and fourth rings were added, thus giving a vertical height of 40 feet to the whole structure, I conceive a difficulty would be encountered in causing the rings to descend; and I then propose to commence removing the sand from the interior by the means of dredging machines.

By constantly removing this interior mass of sand, and adding fresh rings, and additional weight to these connected rings, I conceive that eventually the chalk will be reached, and the engineer will have a large shaft sunk through the sand,—a shaft whose diameter shall be 100 feet at the base and 70 feet at the top, which top shall be 16 feet above high water. Underneath the edge of the bottom ring the chalk might then be removed a few feet, so as to give the whole structure a firm and level base. * * *

Having sunk this shaft in the manner described, I would then proceed to build a strong stone building, well founded in the chalk, and entirely independent of the iron shaft, which would encase it all around. Of the detail of such a building it is not here necessary to speak. It would of course be fireproof, and afford accommodation for stores as well as inhabitants. The space between the outside of the building and the inside of the shaft would be subsequently filled in with rubble-work, which would of course add to the stability of the whole structure. The whole of the iron rings, when connected and filled in, would rise, as I have said, some 16 feet above high-water mark, and would be planked over, forming a platform round the stone lighthouse. This building would rise about 124 feet above the sands themselves. The size of this building would admit of much accommodation. The upper chambers should be appropriated to the accommodation of, I think, twenty men; who should continually reside there, not only for the purpose of attending to the main light, but also to the lesser beacons, if thought necessary, and, in case of wreck, to afford the means of manning two life-boats, each with a crew of eight men."

* Description of a Method of Founding a Lighthouse on the Goodwin Sands. By Thomas Hoblyn, F.R.S., V.P.S.A. &c. London: Samuel Bagster, Fleet-street.

MEMORANDA IN CORK.

The new district lunatic asylum is now nearly completed: it is expected that the patients will be removed to it about March. A large number of men are employed in levelling the slopes and terraces in front. The church is a detached building consisting of a nave and chancel, with sacristy of the Early English period: the west end is crowned by a bell-cot: the entrance is by a porch on the south side: it is a picturesque adjunct to the main building. The exterior of the building is of a severe and forbidding character, rather too expressive of its intended uses, which by some, no doubt, will be looked upon as an excellence, but in this and like instances the rule "characteristic" might judiciously be departed from. The architect is Mr. William Atkins, of Cork, from whose designs the new convent of the Sisters of Mercy is now erecting (an engraving of which appeared in The Builder). This building is a successful adaptation of the Early English style to conventual purposes: it is built of red sandstone in the walling and light grey limestone dressings. The building is now roofed in.

A new chapel in connection with the Society of St. Vincent de Paul is now erecting from the designs of Mr. John Benson, county surveyor: it consists of a nave and aisles, with a chancel, sacristy and western tower. Being built on the side of a hill, the nature of the ground allows of a crypt, a portion of which will be used as a school-room: the foundations,

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